REMARKS AND ARGUMENTS

Response to Previously Presented Arguments

The Examiner noted that he considered the Applicant's previously presented arguments with respect to claims 1-3 and 4-48 but found that they are now moot in view of new gound(s) for rejection. In the present office action the examiner relies on a newly cited reference.

Claim Rejections - 35 USC § 102

Claims 1-3 and 5-48 were rejected under 35 U.S.C. 102(a) as being anticipated by U.S. Patent Application Pub. No. 2001/0000622 to Reeh et al. ("Reeh"). Of these, claims 1, 18, 32 and 44 are independent claims from which the remaining claims depend. Although Applicant disagrees that Reeh teaches all the limitations of the rejected claims, some of the claims have been amended to more fully describe the subject matter therein.

Independent Claim 1

As amended, claim 1 now provides that the conversion material region is "hemispheric shaped" having "conversion particles throughout", while still being formed separately from said light source. Reeh does not disclose, teach or suggest these limitations. The only embodiment in Reeh that even suggests separate formation of a conversion material region is shown in FIG. 3. The description of this section provides:

> "The recess 9 is covered by a luminescence conversion layer 4, for example, a separately produced covering plate 17 made of plastic which is fixed to the base housing 8."

Reeh goes on to describe "a covering 29 (depicted by a broken line) in the form of a lens can be provided on the luminescence conversion layer." The covering 29 however does not include conversion particles throughout, but instead comprises a transparent plastic on the conversion layer 4. (paragraphs [0093] and [0094]). Thus, Reeh does not disclose, teach or suggest a separately formed hemispheric conversion material region with conversion particles throughout. Instead it teaches a flat covering plate with a transparent lens.

This structure difference between Reeh and the structure in amended claim 1 is significant. In Reeh, light emitting from the semiconductor emitter at different angles passes through different amounts of conversion material. The emitter 1 in Reeh is arranged below the covering plate 17 with the covering plate extending laterally above the emitter 1. Light emits from the emitter 1 in all directions, and the plate is not shaped to match the emitter's omnidirectional emission pattern. Light that is emitted from the emitter and is directed toward the edge of the plate 17 passes through more conversion material than light emitted directly up from the emitter 1 and through the plate 17. These differences can result in a non-uniform emission pattern for the light radiating component in Reeh.

By contrast the invention in claim 1 provides a hemispheric conversion material region which more closely matches the radiation pattern of an emitter such as an LED. It also has conversion particles throughout the conversion material region. This allows light emitted at different angles to pass through similar thicknesses of conversion material region and similar amounts of conversion particles. This provides for a more

uniform emission pattern for the overall emitter. As also mentioned in the specification, by forming the conversion material region separately from the emitter the concentration of conversion particles throughout the emitter can be better controlled. This also promotes uniform emission from the overall emitter.

Reeh does not disclose, teach or suggest the limitations of claim 1 and does not address the advantages provided by the present invention. Applicant respectfully submits that amended claim 1 is allowable over Reeh. Claims 1, 3 and 5-17 depend from allowable claim 1 and are also allowable.

Independent claim 18

As amended, claim 18 now describes a conversion material region "having an inside surface that is substantially the same shape as a plurality of outside surfaces, said conversion material region formed separately from said light source and positioned on said light source". This claim is generally directed to the embodiment shown in the FIGs. 13-16 of the present application, although it is understood that the claim also covers many other embodiments arranged in different ways. This can include embodiments where the conversion material region does not have uniform thicknesses throughout.

This arrangement provides the advantage of matching the inside surface of the conversion material region to the outside surface of the emitter so that the light emitted from those surfaces encounters conversion material in close proximity to the emission surface. The arrangement also provides the advantages mentioned above for conversion material regions formed separately from the emitter.

In Reeh the FIGs. 1, 5, 10 and 13 show a luminescence encapsulant treated with a luminescent material 5, with the encapsulant encasing the emitter. In these devices, however, the conversion material region is not formed separately from the emitter, but is formed directly on the emitter with its form taking shape on the emitter. FIG. 6 of Reeh shows a luminescence conversion layer 4 applied directly to the semiconductor body of comprising the emitter 1. There is no conversion material region formed separately from the emitter. Again, the conversion layer 4 is formed directly on the emitter with its form taking shape on the emitter 1.

Reeh does not disclose, teach or suggest the limitations of amended claim 18 and Applicant respectfully submits that claim 18 is in condition for allowance. Dependent claims 19, 20, 23, 28 and 29 have been amended herein to be consistent with the language of amended claim 18 and/or to more fully describe the inventive subject matter herein. Claims 22, 25 and 26 have been cancelled for consistency with the language of amended claim 18 and applicant reserves the right to pursue these in a divisional or continuation.

Dependent claims 19-21, 23, 24 and 27-32 depend from allowable claim 18 and are also allowable.

Independent claim 32

As amended, claim 32 is a method claim that now describes "providing a separately formed hemispheric conversion material region which includes conversion particles throughout." These limitations are similar to those in amended independent claim 1, and claim 32 is allowable for the same reasons as claim 1.

Dependent claims 37 and 40 have been amended herein to be consistent with the language of amended claim 32 and/or to more fully describe the inventive subject matter herein. Claims 33-43 depend from allowable independent claim 32 and are also allowable.

Independent claim 44

As amended, claim 44 now provides a limitation of "a substantially hemispherical lens element having a uniform distribution of wavelength conversion material dispersed throughout, said lens element molded separately from said light source." These limitations are also similar to those in claim 1, and claim 44 is allowable for the same reasons as claim 1. Claims 45-48 depend from allowable independent claim 44 and are also in condition for allowance.

CONCLUSION

Applicant submits that claims 1-3, 5-21, 23, 24 and 27-48 are in condition for allowance and respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

November 17, 2008

Jaye Heybl
Attorney for Applicant
Registration No. 42,661

KOPPEL, PATRICK, HEYBL & DAWSON
555 St. Charles Drive, Suite 107
Thousand Oaks, CA 91360
Phone 805 373 0060,
Fax 805 373 0051